Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 February 2002</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>01 March 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date <u>3/2/2002</u>.

4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claims 1 – 20 have been examined.

Information Disclosure Statement

1.   The Information Disclosure Statement filed March 1, 2002 has been considered.

Specification

2.   The abstract of the disclosure is objected to because it is longer than 150 words.

Correction is required. See MPEP § 608.01(b).

3.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed. Legal words like "System" and

Method" should be removed.

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

Claims 1 – 10 and 16 - 20 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. The claimed matter is not embodied on a tangible

readable medium. The Examiner offers one of many ways to overcome the rejection.

Claim 1
A method for providing a graphic representation of code characteristics tangibly embodied on a
computer readable medium, the method comprising: acquiring a block of code in a program;
analyzing the block of code for at least one instruction characteristic;   generating a unique
graphical indicator for the at least one instruction characteristic; and displaying the unique
graphical indicator with the block of code to indicate that the at least one instruction
characteristic is present in the block of code.

Claim 6

A system for providing a graphic representation of code characteristics <u>tangibly embodied on a computer readable medium</u>, comprising: means for acquiring a block of code in a program; means for analyzing the block of code for at least one instruction characteristic; means for generating a unique graphical indicator for the at least one instruction characteristic; and means for displaying the unique graphical indicator with the block of code to indicate that the at least one instruction characteristic is present in the block of code.

Claim 16
A system for providing a graphic representation of code characteristics <u>tangibly embodied on a computer readable medium</u>, comprising:

a debug tool that indicates instruction characteristics in a program, wherein the debug tool further comprises:

logic for acquiring a block of code in the program;

logic for analyzing the block of code for the at least one instruction characteristic;

logic for generating a unique graphical indicator for the at least one instruction characteristic; and

logic for displaying the unique graphical indicator with the block of code to indicate that the at least one instruction characteristic is present in the block of code.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1, 6, 11 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by

Morganelli et al USPN #6,425,120 filed January 14, 2000 published July 23, 2002.

Claim 1
Morganelli teaches a method for providing a graphic representation of code characteristics, the method comprising: acquiring a block of code in a program; analyzing the block of code for at least one instruction characteristic; generating a unique graphical indicator for the at least one instruction characteristic; and displaying the unique graphical indicator with the block of code to indicate that the at least one instruction characteristic is present in the block of code.
<u>Examiner's Response</u>

Morganelli teaches a method for providing a graphic representation of code characteristics (See figure 4D and associated text), each with unique ID (Fig 4D, 434a, 426a). Block of code Figure 4D, #418.

Claim 6
Morganelli teaches a system for providing a graphic representation of code characteristics, comprising: means for acquiring a block of code in a program; means for analyzing the block of code for at least one instruction characteristic; means for generating a unique graphical indicator for the at least one instruction characteristic; and means for displaying the unique graphical indicator with the block of code to indicate that the at least one instruction characteristic is present in the block of code.
Examiner's Response
As per claim 1.

Claim 11
Morganelli teaches a computer readable medium for a graphic representation of code characteristics, comprising: logic for acquiring a block of code in a program; logic for analyzing the block of code for at least one instruction characteristic; logic for generating a unique graphical indicator for the at least one instruction characteristic; and logic for displaying the unique graphical indicator with the block of code to indicate that the at least one instruction characteristic is present in the block of code.
Examiner's Response
As per claim 1.

Claim 16
Morganelli teaches a system for providing a graphic representation of code characteristics, comprising:
        a debug tool that indicates instruction characteristics in a program, wherein the debug tool further comprises:
                logic for acquiring a block of code in the program;
                logic for analyzing the block of code for the at least one instruction characteristic;
                logic for generating a unique graphical indicator for the at least one instruction characteristic; and
                logic for displaying the unique graphical indicator with the block of code to indicate that the at least one instruction characteristic is present in the block of code.
Examiner's Response
As per claim 1 and TI page 3-29.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 1 – 20 are rejected under 35 U.S.C. 103(e) as being unpatentable over Morganelli

et al USPN #6,425,120 filed January 14, 2000 published July 23, 2002 in view of TMS320C6X

Optimizing Compiler User's Guide, Texas Instrument 2000 (Called TI).

Morganelli teaches a environment to support visual debugging and optimization but Moranelli
does not teach the underlying theory of compiler optimization. It is TI who teaches compiler
optimization. Therefore, it would have been obvious to one of ordinary skill in the art at the time
of invention to combine Morganetti and TI, because visual debuggers and optimization make
development environments easier to use.

Claim 2
The method of claim 1, wherein the at least one code characteristic is selected from the group
consisting of a user-visible sub-statement instruction, a loop entry instruction, a loop body
instruction, dead code instruction, and a data-speculative load instruction.
Examiner's Response
TI teaches at least one a data-speculative load instruction (TI, pages 3-4, 3-4 to 3-11 and
Appendix A, pipelining)

Claim 3
The method of claim 1, wherein the unique graphical indicator is selected from the group
consisting of text color, background color, a tine, an arc, a box and a tag.
Examiner's Response
Morganelli, Figure 4D.

Claim 4
The method of claim 1, wherein the displaying the unique graphical indicator step further
comprises: indicating if the at least one instruction characteristic is a loop-carried dependency.
Examiner's Response
Ti, page 3-13

Claim 5
The method of claim 1, wherein the displaying the unique graphical indicator step further
comprises: indicating if the at least one instruction characteristic is a data-speculative load
instruction with at least one possible conflicting store.
Examiner's Response
instruction (TI, pages 3-4, 3-4 to 3-11 and Appendix A, pipelining)

Claim 7
The system of claim 6, wherein the at least one code characteristic is selected from the group
consisting of a user-visible sub-statement instruction, a loop entry instruction, a loop body
instruction, dead code instruction, and a data-speculative load instruction.
Examiner's Response
As per claim 2.

Claim 8
The system of claim 6, wherein the unique graphical indicator is selected from the group
consisting of text color, background color, a line, an arc, a box and a tag.
Examiner's Response
As per claim 3.

Claim 9
The system of claim 6, wherein the displaying means further comprises: means for indicating if
the at least one instruction characteristic is a loop-carried dependency.
Examiner's Response
As per claim 4.

Claim 10
The system of claim.. 6, wherein the displaying means further comprises: means for indicating if
the at least one instruction characteristic is a data speculative load instruction with al: least one
possible conflicting store.
Examiner's Response
As per claim 2.

Claim 12
The computer readable medium of claim 11, wherein the at least one code characteristic is
selected from the group consisting of a user-visible sub-statement instruction, a loop entry
instruction, a loop body instruction, dead code instruction, and a data-speculative load
instruction.
Examiner's Response
As per claim 2.

Claim 13
The computer readable medium of claim 11, wherein the unique graphical indicator is selected
from the group consisting of text color, background color, a line, an arc, a box and a tag.

Examiner's Response
As per claim 3.

Claim 14
The computer readable medium of claim 11, wherein the displaying logic further comprises:
logic for indicating if the at least one instruction characteristic is a loop-carried dependency.
Examiner's Response
As per claim 4.

Claim 15
The computer readable medium of claim 11, wherein the displaying logic further comprises:
        logic for indicating if the at least one instruction characteristic is a data
speculative load instruction with ad least one possible conflicting store.
Examiner's Response
As per claim 5.

Claim 16
Morganelli teaches a system for providing a graphic representation of code characteristics,
comprising:
        a debug tool that indicates instruction characteristics in a program, wherein the
debug tool further comprises:
                logic for acquiring a block of code in the program;
                logic for analyzing the block of code for the at least one instruction
        characteristic;
                logic for generating a unique graphical indicator for the at least one
        instruction characteristic; and
                logic for displaying the unique graphical indicator with the block of code
        to indicate that the at least one instruction characteristic is present in the block of
        code.
Examiner's Response
As per claim 1 and TI page 3-29.

Claim 17
The system of claim 16, wherein the at least one code characteristic is selected from the group
consisting of a user-visible sub-statement instruction, a loop entry instruction, a loop body
instruction, dead code instruction, and a data-speculative load instruction.
Examiner's Response
As per claim 2.

Claim 18
The system of claim 16, wherein the unique graphical indicator is selected from the group
consisting of text color, background color. a line, an arc, a box and a tag.

Examiner's Response
As per claim 3.

Claim 19
The system of claim 16, wherein the displaying logic further comprises: logic for indicating if the a: least one instruction characteristic is a loop-carried dependency.
Examiner's Response
As per claim 4.

Claim 20
The system of claim 16, wherein the displaying logic further comprises: logic for indicating if the at least one instruction characteristic is a data speculative load instruction with at least one possible conflicting store.
Examiner's Response
As per claim 5.

Correspondence

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Todd Ingberg whose telephone number is (571) 272-3723. The

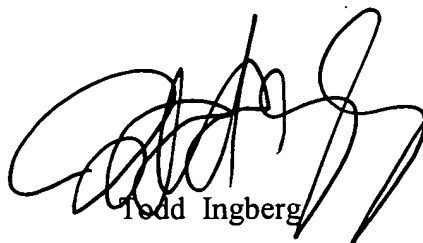examiner can normally be reached on during the work week..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2193

Todd Ingberg

Primary Examiner

Art Unit 2124

TI